

ulation, particularly including children with severe pulmonary hypertension.

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Reply to the Editor:

We appreciate the kind comments of Dr Corno in his letter regarding our article.¹ We also appreciate his astute delineation of the categories of congenital conditions in which our technique could be applied clinically. We wish to emphasize, however, that ours is at this point an experimental technique, confined to short-term application in the experimental laboratory. We are not advocating clinical application at this time.

To address Dr Corno's specific comments, we need to distinguish between two different experimental procedures developed in our laboratory, which are easily confused because both rely on surgical separation of the right and left ventricles into independent units. In the experiments to which the letter is addressed, we transplanted an accessory donor right heart onto a complete recipient heart, the accessory right heart transplantation procedure. This is being investigated as an alternative treatment for congenital hypoplastic lesions of the right side of the heart in children. In an

earlier series of experiments,² we reported an experimental right heart-sparing procedure in which the right ventricle of a recipient is preserved and a complete donor heart is implanted. This latter procedure is intended, in principle, for human recipients with severe ambient pulmonary hypertension, a setting in which right heart failure, possibly lethal, is frequently encountered. Both these experimental operations rely on the physical separation of right and left sides of the heart, but they represent essentially converse procedures for completely disparate indications.

Dr Corno enumerates other operations that may have application to patient groups with right ventricular hypoplasia or clinical decompensation after conventional palliative surgery. We agree that the one-and-a-half ventricular repair about which he and others have published has merit. This approach allows a bidirectional Glenn shunt to perfuse the lungs with the superior vena caval flow, while the diminutive right ventricle continues to pump the inferior vena caval flow to the pulmonary artery. We hasten to point out that this repair uses the *native* one-and-a-half ventricles and should not be confused with our right ventricle-sparing *transplant* operation,² which has at times been called the "heart-and-a-half" operation.

We agree fully that the acute experiments presented in our article did not subject the accessory right heart to ambient pulmonary hypertension. In related experiments currently in press,³ our converse procedure of right ventricle-sparing transplantation did successfully cope with severe induced iatrogenic pulmonary hypertension.

We agree that heterotopic transplantation represents a viable solution in many situations in which pulmonary hypertension precludes traditional orthotopic cardiac transplantation. In short-term experiments, Corno and colleagues used the left ventricle of a full heterotopic transplant to perfuse the right-sided circulation. There are several advantages to transplanting an isolated right heart. The operation can be done without cardiopulmonary bypass. Space issues are minimized, because there is no left ventricle. Finally, the potential donor pool is quite large and different from the standard donor pool, because hearts with left ventricular dysfunction may be acceptable. In fact, such hearts might even

be preferable, because they have "preconditioned" the right ventricle against left ventricular failure.

Standard heterotopic transplantation, described in the early era of clinical cardiac transplantation, continues to be quite limited in application, largely because of problems of embolization and arrhythmias originating in the preserved native left ventricle and because of mass effects of the heterotopic heart in the pulmonary space. Our right heart-sparing transplant procedure was designed to avoid these problems.

We congratulate Dr Corno on the important work he has highlighted and thank him for his insightful commentary on our recent article.

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The radial artery: Neither gold, nor silver, but bronze?

To the Editor:

I greatly appreciated reading Dr Lytle's insightful comments in his editorial on the radial artery (RA) versus the right internal thoracic artery (RITA) as a second arterial conduit for coronary surgery.¹ All that he says is true: the RITA graft, when considering its historical older brother the left internal thoracic artery (LITA) graft, should have the same long-term potential but technically poses a bigger challenge. Hence surgeons opt for a more user-friendly arterial conduit, the RA. I would like to suggest a differ-